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Title: Committee lists for Montrose Fish SRB. 1: Fish sampling issues; 2: Contaminant & tissue sampling issues; 3: Quality assurance / quality control; 4: Statistical analysis issues

COMMITTEE LISTS FOR MONTROSE FISH SRB

Committee 1: Fish Sampling Issues

- Chair: Jim Allen
- Members: Steve Schroeter, Alyce Ujihara, Ken Nielsen, Rich Ambrose, Patty Velez, Jan Stull, Bob Brodberg, Dennis Bedford

Committee 2: Contaminant and Tissue Sampling Issues

- Chair: Rich Gossett
- Members: Bob Brodberg, Jim Allen, Alyce Ujihara, Steve Schroeter, Fred Schauffler, Dave Montaigne, Mark Gold, Guang-Yu Wang

Committee 3: Quality Assurance/ Quality Control

- Chair: Ann Bailey
- Members: Ken Nielsen, Rich Gossett

Committee 4: Statistical Analysis Issues

- Chair: Harvey Motulsky
- Members: Bob Brodberg, Steve Schroeter, Rich Gossett

Committee 1: Fish Sampling Issues

- Chair: Jim Allen
- Members: Steve Schroeter, Alyce Ujihara, Ken Nielsen, Rich Ambrose, Patty Velez, Jan Stull, Bob Brodberg, Dennis Bedford

Questions

1. How much geographic resolution is needed? What sites should be sampled?
2. What species should be sampled?
3. Should samplings be repeated over time? Seasonally? Yearly?

Fish Sampling Plan questions

1. Where will fish be caught? from piers? from boats?
2. What sorts of independent observers are required?
3. Can we collect extra fish?
4. Will this require setting gill nets?
5. Any permits needed for the sampling should be mentioned in the sampling plan.
6. Any approval process required for obtaining and killing the animals?

Committee 2: Contaminant and Tissue Sampling Issues

- Chair: Rich Gossett
- Members: Bob Brodberg, Jim Allen, Alyce Ujihara, Steve Schroeter, Fred Schauffler, Dave Montagne, Mark Gold, Guang-Yu Wang
- Questions

1. To avoid directing anglers to fish with excessive levels of other contaminants, what other contaminants should be measured besides DDTs and PCBs? Other organics? Mercury? Lead? Cadmium?

2. Can this sampling be "dove-tailed" into other projects, such as the bight-wide projects lead by SCCWRP?

3. Can this sampling be part of EPA's efforts, such as public education, other "institutional controls," and monitoring for the effectiveness of capping?

4. What tissues should be analyzed?

    - Whole fish?

    - Whole gutted fish?

    - Muscle (fillet) tissue? Contaminant levels are higher in whole gutted fish than in fillet only. White croaker is usually eaten as whole gutted fish, but the contaminant levels in white croaker, as for most fish, have been historically compared using fillet samples (muscle tissue) only. Probably most fish are eaten as whole gutted fish and as fillets. To be protective of anglers, the Trustees should consider analysis of the more contaminated preparation—the whole gutted fish.

Committee 3: Quality Assurance/ Quality Control

- Chair: Ann Bailey
- Members: Ken Nielsen, Rich Gossett

1. How do we select labs to analyze the tissues?
    - Previous projects have had inaccurate chemistry from some labs.
2. What QA/QC procedures should be used?
    - Shouldn't blind standards ('knowns") be included?
3. Does old frozen fish change in wet weight or contaminant concentration?
4. How long can we hold extra fish?

Committee 4: Statistical Analysis Issues

- Chair: Harvey Motulsky
- Members: Bob Brodberg, Steve Schroeter, Rich Gossett
- Questions

1. What are adequate sample groupings and sample sizes of fish for contaminant analysis?

- Should analysis be of individual samples of individual fish?
  - This is the most expensive set up.
  - It would provide the best measures of variance and provide the most information about processes of contamination (showing movement of fish, etc.).
  - It would also provide data that could be used for Monte Carlo analyses.
  - It would provide data for fish size vs. contaminant concentration.
  - This would allow us to look at concentrations of DDTs and PCBs in fillet vs. the same fish whole, but gutted.

2. Should analysis be of composite samples?

- Per unit effort, this would provide the best estimate of mean contaminant concentration in the fish caught.
- Composites would not allow us to know how concentrations vary with size of fish.
- Unless we had reliable data to demonstrate that the size composition of fish in our sample was the same as anglers catch, or size doesn't matter, we would not have a good estimate of the mean contaminant exposure for anglers repeatedly consuming fish from a site.

3. Should analysis include both individual and composite samples? In addition to analyzing individual samples, analyzing a few composites of a large number of individuals could provide a better estimate of the mean.
4. What other variables should also be measured as part of the analysis?

- Basic measures include length, weight, sex, season, and age, all of which could help to determine the sources of variation in DDT and PCB concentrations.
- This information would help standardize comparisons and be part of the information in the education campaign (e.g., are big fish more contaminated than small fish?).